

## Beetles of the Genus *Anthophylax* in Virginia (Coleoptera: Cerambycidae: Lepturinae)

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In a family of beetles renowned for their spectacular form and coloration, species of the Nearctic genus *Anthophylax* are, by virtue of their vivid green to rosaceous metallic hues, no less impressive than their larger tropical relatives. Three species occur in northeastern North America, and extend southward along the Appalachians into western Virginia; a fourth is endemic to high elevations in the Southern Blue Ridge and is here newly recorded from Virginia at its northernmost known locality. Virginia becomes the first state in which all four members of the genus are known to occur.

The species of *Anthophylax* do not share the predilection of lepturines generally to congregate at flowers of such low-growing plants as *Hydrangea*, *Ceanothus*, and *Cimicifuga*, and as a result are not commonly represented in collections (for example, the VPISU collection, replete with scores of cerambycids in other genera of Lepturini, has no Virginia specimens of any of the four endemic species). On the contrary, virtually all of the numerous VMNH specimens were taken in pitfall traps (a few were attracted to UV light), implying a distinctive life style within the tribe. Adults of some species are thought to feed on the pollen of male gymnosperm cones, and several are known to visit the flower clusters of mountain maple (*Acer spicatum*).

It is hoped that this brief synopsis of the genus as it occurs in Virginia will stimulate local interest in our fauna, leading to a better knowledge of the geographic and seasonal distribution of our species, and their biology. All of the VMNH specimens of all four species were collected during the first half of June, implying a rather short period of adult activity and restricting the time in which these beetles can be collected or observed.

### Genus *Anthophylax* LeConte

A genus of Lepturini characterized by distinct lateral pronotal projections and deep subapical constriction, coarsely faceted eyes, terminally placed tibial spurs, and

eyes deeply emarginate around antennal sockets.

The latest treatment of the genus is the excellent summary by Linsley & Chemsak (1972) which gives detailed descriptions of each species and a complete listing of relevant literature. All except *A. hoffmani* are illustrated in color by Yanega (1996). *Anthophylax quadrimaculatus* Champlain & Knull is currently placed in *Centrodera*.

### Key to the species of *Anthophylax*

1. Integument not metallic; elytra brown, not obviously punctate, invested with short recumbent silvery setae.....*attenuatus*
  - Integument bright shiny metallic; elytra green or purplish gold, with rows of large round punctations, only a few small scattered setae .....2
2. Pronotum dorsally flattened, the surface very coarsely punctate-rugulose, with a shallow subcircular depression each side near base of the large lateral projections, and a distinct polished subbasal transverse ridge.....*hoffmani*
  - Pronotum evenly convex, smooth, punctations small and separated, no trace of rugosity or other surface texture, no paramedian depressions nor subbasal polished ridge.....3
3. Elytra apically rounded; pronotum similar in color and texture to the elytra; legs orange. ....*cyaneus*
  - Elytra apically acute; pronotum piceous to black and much less metallic than the elytra; legs black...*viridis*

### *Anthophylax attenuatus* (Haldeman)

New southernmost localities

The distribution map in Linsley & Chemsak (1972: 74) shows localities extending from Minnesota to Nova Scotia, and southward as far as Page County, Virginia. Recent collections extend the range still further along the Appalachians:

*Augusta Co.* Shenandoah Mountain, pitfall site off FS 85, 3 mi. S jct. FS 95, 17 June 1988, K. A. Buhlmann (2). *Wise Co.*: FS cabin off Rt. 706, 5 km (airline) SSW Tacoma, 6-9 June 1993, S. M. Roble (1).

At the Shenandoah Mountain locality, the two *A. attenuatus* were captured in the same pitfalls, in the same time interval, with one specimen of *A. viridis* and many individuals of *A. cyaneus*. This may be the first recorded instance of triple syntopic synchrony for these beetles.

Occurrence of the species in Wise County (High Knob region) virtually assures that it will be found in eastern Kentucky and perhaps in Tennessee and North Carolina as well.

### ***Anthophylax hoffmani* Beutenmüller**

New state and northernmost locality

Originally described from "Black Mountain, N. C." (Beutenmüller, 1903), this species has been subsequently recorded from as far south and west as the Great Smoky Mountains. The record for Cornelia, Georgia by Fattig (1947) seems improbable, as neither fir nor red spruce occur in that state, and the specimens upon which the record was based are no longer extant (Turnbow & Franklin, 1980). Since the type specimens were found associated with Fraser fir (*Abies fraseri*), the type locality can be restricted to the highest parts of the Black Mountains, probably above 5000 ft. on Mount Mitchell itself. The type series, two males and four females, was taken during the period June 26 to July 11, 1902.

As the species has not been recorded north of the Black Mountains, the capture of a specimen in southwestern Virginia represents a range extension of some 85 miles/140 km and doubles the geographic area in which the species is known to occur.

*Russell Co.*: west side of Beartown Mountain, a prominence of Clinch Mountain east of Rosedale, 3800-4000 feet ASL, 7 June 1988, C. A. Pague and D. A. Young (1).

This new locality is of interest for an additional reason. Existing information on the host plant of *A. hoffmani* associates it with Fraser fir, which, like the beetle, is endemic to the Southern Blue Ridge. This conifer occurs at Mount Rogers, Virginia, where the beetle is thus to be expected, but not at the Clinch Mountain site where red spruce (*Picea rubens*) is present. The fact that *A. hoffmani* can utilize this tree as a food source opens the possibility that it may be found still farther northeast at several sites along Clinch Mountain (such as Burkes Garden) where small stands of red spruce are recovering from near-extirpation by logging activities almost a century ago.

Although superficially similar to both *A. viridis* and *A. cyaneus*, it is nonetheless endowed with enough specialized features (e.g., strong development of surface sculpture as noted in the key) that on direct comparison of the three, I cannot assert that *A. hoffmani* is more closely related (similar) to one than to the other. Presumably, there was a common ancestor that existed in the Southern Appalachians at some time prior to the local evolution of *A. hoffmani* as an obligate associate of Fraser fir (and secondarily, red spruce).

This striking beetle (Fig. 1) was named for Beutenmüller's friend "...the late Very Rev. E. A. Hoffman..." a New York clergyman not related to the present author.

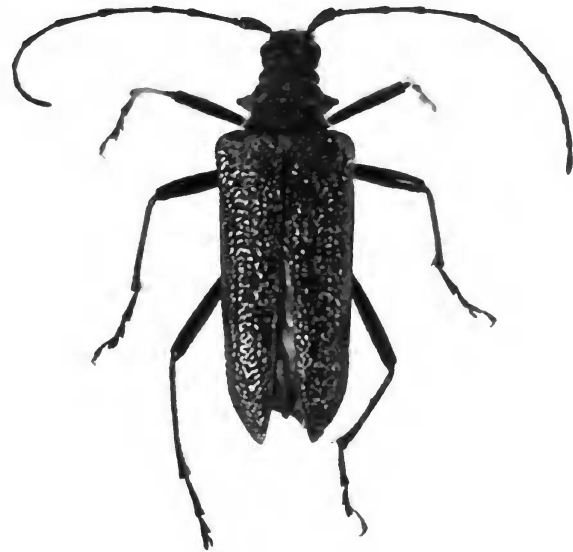


Fig. 1. *Anthophylax hoffmani* from Beartown Mountain, Russell County, Virginia; body length = 18 mm (from labrum to elytral apex) (photograph by Melody Cartwright, VMNH).

### ***Anthophylax cyaneus* (Haldeman)**

Widely distributed across northeastern North America from Nova Scotia to Michigan, and south in the Appalachians to northern Georgia, this species should be more generally distributed in the mountainous parts of the state than our few records - all of which are concentrated in a fairly small area in central western Alleghenies - might suggest. As both this species and the following are known to aggregate at the inflorescence of mountain maple (*Acer spicatum*), the attention of collectors is directed to this likely source for additional captures.

*Augusta Co.*: 5 mi W of Stokesville, 1 October 1988 (2); 16-17 June 1989 (4), all B. Flamm. Shenandoah Mountain, 5 mi SW Reddish Knob, 17 June 1988 (1); 3 mi S of FS 95, 17 June 1988 (15), all K. A. Buhlmann. *Highland Co.*: Locust Springs, Laurel Fork Recreation Area, George Washington National Forest, 22 June 1972, R. L. Hoffman (1), 25 June 1997, C. S. Hobson & M. Hayslett (1). *Rockingham Co.*: Tomahawk Mountain, ca. 7 mi NNW of Rawley Springs, 17 June 1988, K. A. Buhlmann (14).

While the majority of these specimens are dull metallic dark green, the elytra of several are a prominent reddish-purple to bronzy cast. The two specimens from Locust Springs differ from the others in that the distal third of the tibiae is dusky. It will be interesting to see if this remains true in larger samples.

#### ***Anthophylax viridis* LeConte**

Largely sympatric with the preceding species, *A. viridis* is recorded from Quebec to Wisconsin, and south through the Appalachians to northern Georgia although known from only a few sites south of Pennsylvania. Pitfall trapping in Virginia has secured only single specimens per site, against much greater numbers of *A. cyaneus*.

*Augusta Co.*: Shenandoah Mountain, pitfall site off FS 85, 3 mi. S jct. FS 95, 17 June 1988, K. A. Buhlmann (1). *Rockbridge Co.*: Petite's Gap, jct. Blue Ridge Parkway and FS 35, 5 June 1996, M. W. Donahue (1). *Rockingham Co.*: pitfall site off FS 72, Tomahawk Mountain, ca. 7 mi. (airline) NW of Rawley Springs, 17 June 1988, K. A. Buhlmann (1).

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